

WHAT IS CLAIMED IS:

1. A cane comprising:
  - a first member having a first inside diameter, a first end, and a second end;
  - a second member having a ground engaging end, an upper end, and an intermediate section
  - 5 between the ground engaging end and the upper end, the upper end having a second inside diameter, the upper end and a portion of the intermediate section slideably connected to the first member;
  - a ball screw having an top end and a bottom end, and a ball nut threaded onto the ball screw, the bottom end of the ball screw inserted into the second member and the ball nut attached to
  - 10 the second member;
  - power means for rotating the ball screw, the power means operably attached to the ball screw;
  - and
  - means for activating the power means.
2. The cane of claim 1 wherein a motor housing is attached to the first end.
- 15 3. The cane of claim 2 wherein the power means is contained within the motor housing.
4. The cane of claim 3 further comprising a handle member attached to the motor housing.
5. The cane of claim 1 wherein the ball nut is enclosed within a housing, the housing having an outer surface.
6. The cane of claim 5 wherein the housing comprises a thermoplastic material.
- 20 7. The cane of claim 5 wherein the outer surface engages the second inside diameter by a friction fit.
8. The cane of claim 1 wherein the ball screw comprises a first stop pin extending from the surface of the ball screw adjacent to the top end and a second stop pin extending from the surface of the ball screw adjacent to the bottom end.
- 25 9. The cane of claim 8 wherein the ball nut freewheels upon engaging either the first stop pin or the second stop pin.
10. The cane of claim 1 wherein the power means comprises an electric motor.
11. The cane of claim 10 further comprising a current source for operating the electric motor.

12. The cane of claim 11 wherein the current source comprises a battery.
13. The cane of claim 12 wherein the battery is rechargeable.
14. The cane of claim 11 wherein the means for activating the power means comprises a switch electrically connected to the current source, the switch having at least three positions.
- 5 15. The cane of claim 14 wherein when the switch is in the first position the ball screw rotates in a clockwise direction.
16. The cane of claim 14 wherein when the switch is in the second position the ball screw rotates in a counter-clockwise direction.
17. The cane of claim 14 wherein when the switch is in the third position, current flow to the power  
10 means is stopped.
18. The cane of claim 1 wherein the ball screw is attached to the power means by a plurality of gears.
19. The cane of claim 18 wherein the ball screw is attached to the power means by a planetary gear train.
- 15 20. A cane comprising:  
a first member having a first inside diameter, a first end, and a second end;  
a second member having a ground engaging end, an upper end, and an intermediate section between the ground engaging end and the upper end, the upper end having a second inside diameter, the upper end and a portion of the intermediate section slideably inserted within the  
20 second end of the first member;  
a ball screw having a top end and a bottom end, and a ball nut threaded onto the ball screw, the bottom end of the ball screw inserted into the second member and the ball nut attached to the second member;  
power means for rotating the ball screw, the rotation causing the ball nut to traverse a portion of  
25 a length of the ball screw, the power means operably attached to the ball screw; and  
means for activating the power means.
21. The cane of claim 20 wherein a motor housing is attached to the first end.
22. The cane of claim 20 wherein the power means is contained within the motor housing.

23. The cane of claim 20 wherein the ball nut is enclosed within a housing, the housing having an outer surface.
24. The cane of claim 23 wherein the housing comprises a thermoplastic material.
25. The cane of claim 23 wherein the outer surface engages the second inside diameter by a friction fit.
26. The cane of claim 20 wherein the ball screw comprises a first stop pin extending from the surface of the ball screw adjacent to the top end and a second stop pin extending from the surface of the ball screw adjacent to the bottom end.
27. The cane of claim 26 wherein the ball nut freewheels upon engaging either the first stop pin or the second stop pin.
28. The cane of claim 20 wherein the power means comprises an electric motor.
29. The cane of claim 28 further comprising a current source for operating the electric motor.
30. The cane of claim 29 wherein the current source comprises a battery.
31. The cane of claim 30 wherein the battery is rechargeable.
32. The cane of claim 21 further comprising a handle member attached to the motor housing.
33. The cane of claim 32 wherein a battery is enclosed within the handle member.
34. The cane of claim 33 wherein the battery is rechargeable.
35. The cane of claim 34 wherein the handle member further comprises a port for connecting a recharging unit.
36. The cane of claim 29 wherein the means for activating the power means comprises a switch electrically connected to the current source, the switch having at least three positions.
37. The cane of claim 36 wherein when the switch is in the first position the ball screw rotates in a clockwise direction.
38. The cane of claim 36 wherein when the switch is in the second position the ball screw rotates in a counter-clockwise direction.
39. The cane of claim 36 wherein when the switch is in the third position, current flow to the power means is stopped.
40. The cane of claim 20 wherein the ball screw is attached to the power means by a plurality of

gears.

41. The cane of claim 40 wherein the ball screw is attached to the power means by a planetary gear train.

42. A cane comprising:

5 a first member having a first end, a second end, and a first inside diameter;

a second member having a ground engaging end, an upper end, and an intermediate section between the ground engaging end and the upper end, the upper end having a second inside diameter, the upper end and a portion of the intermediate section slideably inserted within the second end of the first member, the cane having a variable length defined by the distance  
10 between the first end and the ground engaging end;

a ball screw comprising a top end, a bottom end, and a ball nut threaded onto the ball screw, the ball screw substantially contained within the second member and the ball nut attached within the second inside diameter;

an electric motor operably attached to the ball gear;

15 a battery connected to the electric motor; and

means for activating the electric motor, wherein the ball nut travels longitudinally along the ball screw when the electric motor is activated, the length of the cane increasing as the ball nut travels toward the bottom end of the ball screw and the length of the cane decreasing as the ball nut travels towards the top end of the ball screw.

20 43. The cane of claim 42 further comprising a motor housing attached to the first end.

44. The cane of claim 43 wherein the electric motor is contained within the motor housing.

45. The cane of claim 42 wherein a plurality of gears operationally connects the electric motor to the ball screw.

46. The cane of claim 42 wherein the ball nut is enclosed within a housing, the housing having an  
25 outer surface.

47. The cane of claim 46 wherein the housing comprises a thermoplastic material.

48. The cane of claim 46 wherein the outer surface engages the second inside diameter by a friction fit.

49. The cane of claim 42 further comprising a first stop pin extending from the surface of the ball screw adjacent to the top end and a second stop pin extending from the ball screw adjacent to the bottom end.
50. The cane of claim 49 wherein the ball nut freewheels upon engaging either the first stop pin or the second stop pin.
51. The cane of claim 42 wherein the battery is rechargeable.
52. The cane of claim 43 further comprising a handle member attached to the motor housing.
53. The cane of claim 52 wherein the battery is enclosed within the handle member.
54. The cane of claim 42 wherein the ball screw comprises a spline gear attached to the top end.
55. The cane of claim 54 wherein the spline gear is supported within the first member by a first bearing means.
56. The cane of claim 42 wherein the bottom end of the ball screw is supported within the second member by a second bearing means.
57. The cane of claim 56, wherein the second bearing means comprises a clutch bearing.
58. The cane of claim 57, wherein the clutch bearing is encased within a bearing housing.
59. The cane of claim 58, wherein the bearing housing comprises a thermoplastic material.